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QUALITY OF LIFE AFTER IMMEDIATE BREAST RECONSTRUCTION IN CARCINOMA BREAST - AN INDIAN SCENARIO.

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Abstract:
Background: Immediate breast reconstruction (IBR) in breast cancer is a well-accepted option but is not commonly offered in India. The purpose of this study is to evaluate the quality of life after IBR. **Materials and methods**: This prospective study has been conducted over 40 patients of operable carcinoma breast, who underwent either modified radical mastectomy (MRM) in control group or MRM followed by IBR using autologous tissue in the study group. Both the groups were evaluated in terms of technical issues, morbidity, clinical outcome and quality of life (QoL). The psychological satisfaction in either group was studied by body image scale. **Results**: In the postoperative period, complication rate of 35% was noted in the study group as compared to 10% in the control group. In the study group, 95% of the patients were satisfied with the body image. Among these, 20% of patients were highly satisfied, 75% were moderately satisfied. On the other hand, 80% of the patients undergoing MRM alone were not satisfied at all. **Conclusion:** Immediate breast reconstruction following mastectomy is a logically better option to preserve the femininity, gives a higher level of patient satisfaction and significantly improves the quality of life.

INTRODUCTION

Treatment of breast cancer has evolved over time from Halstead's radical mastectomy to breast conservation to oncoplastic reconstruction. Breast conservation surgery (BCS) whenever possible is the standard of care today.

Though BCS is the treatment of choice in developed countries owing to earlier detection of the disease by a nationwide mass screening program, the situation is different in our country where patients frequently present with advanced disease. Moreover, there are certain contraindications to BCS e.g. two or more tumors in separate quadrants of the breast, prior radiation therapy to the region, collagen vascular disorders, large tumor in the small breast, etc.[1]

Prophylactic mastectomy is an effective risk-reducing option in women with a family history of breast cancer, high-risk histology and increased breast density[2]. Thus, even in developed countries, many patients prefer

mastectomy because of disease factors or fear of recurrence.[3, 4]

Therefore, both in developing and developed countries, modified radical mastectomy (MRM) is, still the treatment of choice, in many of the situations. Advantage of mastectomy is that it is one-time-treatment and if a good reconstruction, without any adverse oncological effects, is possible, this must be ideal. Breasts are important symbols of feminism. A woman who is diagnosed with breast cancer feels frightened, not only at the prospect of having the malignant disease but also by the possibility of a radical change in her appearance after mastectomy. The psychosexual aspect of a patient's life is not given due consideration, probably because of ignorance-both on part of the surgeon and the patient.

Breast Reconstruction carried out at the time of mastectomy i.e. immediate breast reconstruction (IBR)) or later i.e. deferred breast reconstruction (DBR) should be seen as a part of overall treatment of breast cancer, allowing construction of breast similar in shape and texture to the patient's natural breast and avoid the need for any form of external prosthesis.[5]

IBR has the potential to provide the best cosmetic outcome with added psychological benefit.[6, 7] It is oncologically safe and does not hinder with post-operative chemotherapy or radiotherapy.[8]

MATERIALS AND METHODS

This work was carried at the Department of Surgery and Surgical Oncology, PGIMS, Rohtak (India) as a prospective study, from July 2007 to December 2009 after due approval of the research and ethical committee. Once the diagnosis of carcinoma breast was established, TNM staging and metastatic work were completed on an outpatient basis. The contralateral normal breast was examined and anthropometric and mammographic measurements were made to calculate the volume of breast tissue. Patients with locally advanced breast cancer (LABC) were given three cycles of neoadjuvant chemotherapy (CEF/ Taxane based) and reassessed. They were also included in the study if found operable.

The study included 40 patients in two groups (n=20 each): Group A viz. Control group-Modified Radical Mastectomy (MRM) only and Group B viz. Study group- Skin sparing modified radical mastectomy (SSM) with IBR using either Latissimus Dorsi (LD) flap or Transverse Rectus Abdominis Muscle (TRAM) flap.

Postoperative care - Drains were removed when drainage was <20 ml/day with suture removal on 13th or 14th postoperative day. Adjuvant therapy, if required, was given according to the final histopathological report. The cosmetic result and psychological impact were assessed using body image scale[9] as given below.

Body image scale

1. I feel whole.
2. I like the way my blouses/sweaters fit.
3. My bra fits comfortably.
4. I feel attractive.
5. I like the appearance of my breast.
6. My husband likes the appearance of my breasts.
7. The size and shape of my breasts are the same.
8. My reconstructed breast feels soft to the touch.

These items were scored on a five-point **Likert scale**, ranging from 1 meaning 'highly disagree' to 5 for `highly agree', with total possible score (ranging from 8 to 40) assessed for satisfaction as follows-

SCORE LEVEL OF SATISFACTION

36 – 40	Extremely satisfied
31 – 35	Quite a bit satisfied
26 – 30	Moderately satisfied
21 – 25	A little bit satisfied
< 20	Not at all satisfied

OBSERVATIONS AND RESULTS

Mean age of patients in both the groups was comparable, 46.5 years and 40 years, respectively in groups A & B. Most patients in our study presented in stage II or stage III A. In group A, 11 patients presented in stage II and 6

in stage III while in group B, 13 patients presented in stage II and 4 in stage III. There were 3 patients in each group who were worked up after lumpectomy, hence not labeled any stage.

Mean duration of surgery in group A was 1.84 hours while that in group B was 6.29 hours (4.1 hours for LD flap and 6.9 hours for TRAM flap) with 3 patients needing a blood transfusion. Mean postoperative stay (A=14 days, B=15 days) and requirement of the drain (A=11.6 days, B=12 days) were similar in both the groups. Morbidity rate in group A was 10% whereas, in group B, it reached up to 35%.

Psychologically, 75% of patients in group B were moderately satisfied with a body image score between 26 to 30, 20% of them were quite a bit satisfied (score 31 to 35). However, one patient was not satisfied (score 11). On the other hand, 80 % of the patients in group A were not satisfied at all while two patients were indifferent to the scale (Table 1).

Table 1: Level of Satisfaction (According to the Body Image Scale)

	Group A	Group B
Extremely Satisfied (36-40)	0	0
Quite Satisfied (31-35)	0	20%
Moderately Satisfied (26-30)	0	75%
Less Satisfied (21-25)	10%	0
Not Satisfied (<20)	80%	5%
Indifferent	10%	0

DISCUSSION

Breast cancer is a devastating blow to the patient and her family. Mastectomy is the initial modality of treatment followed by various adjuvant therapies. But it leaves behind a defect which is a constant reminder of the disease and adversely affects the body image and psychology of the patient. Breast reconstruction is the answer to these problems. However, the difference in the socioeconomic and cultural milieu of Indian patients casts a significant influence on how they evaluate this procedure. Moreover, tedious and lengthy reconstruction procedures require specific training and most of the general surgeons aren't inclined to undergo the same while the regular availability of a plastic surgeon is not always possible.

Although reconstruction should be offered despite age, it is likely that younger patients would ask for it. The mean age of patients undergoing IBR in our study was 40 years. Another Indian study by Shaikh et al reported hardly any patients above 50 years of age opting for breast reconstruction.[10]

Most of the patients in our study belonged to stage II and III. None of the patients in the present study had a local recurrence. Similarly, Newman et al found no significant differences in local relapse or distant metastasis for IBR for locally advanced disease.[11] Most of the local recurrences after SSM or MRM with reconstruction present as palpable nodule intradermal or in subcutaneous tissue, which can be easily recognized clinically.[12]

Mean duration of surgery in the control group was 1.84 hours while that in the study group was 6.29 hours. Mean duration of surgery for LD flap reconstruction was 4.1 hours and that for TRAM was 6.9 hours. This is comparable to study by Schusterman et al who reported mean operating time of 3.73 hours and 8.4 hours for LD and TRAM flap reconstruction in their series, respectively.[13]

Mean duration of hospital stay in the control group in our study was 14 days while in study group it was 15 days. Fathi et al reported a mean stay of 15±4 days.[14] Schusterman et al also reported similar results.[13] However, Timothy et al reported that reconstruction required a prolonged

stay in the hospital as compared to mastectomy alone.[15] Shaikh et al have reported hospital stay of 7 or 8 days.[10] Longer hospital stay in both groups of our study can be explained by the fact that the patients in our set up were keen to be discharged only after ensuring wound health after suture removal (done on 10th to 14th postoperative day).

Overall complication rates in our study were higher in group B reaching up to 35% as compared to 10% complications in group A. These rates are comparable to those found in other studies. Fathi et al reported total complication rates of 31.82% and Pinsolle et al reported an overall complication rate of 49%.[14,16]

There was total flap loss in one (5%) and partial in three patients (15%) of the study group. Similar results have been observed by other studies.[17-19] Various studies report a partial flap necrosis rate ranging from 5% to 40% (Table 2 & 3).

Table 2: Various Studies on Immediate Breast Reconstruction with TRAM flap

STUDY	No. of patients	Total flap loss	Partial flap loss	Superficial skin necrosis	Fat necrosis	Abdominal hernia
Shaikh et al	329	0	0.9%	4.6%	__	0
Fathi et al	44	0	13.6	-	15.9%	11.4%
Trabulsy et al	99	4%	6%	-	-	-
Chang et al	700	5%	6.2%	--	-	-
Hartrampf et al	300	--	8.5%	-	7%	1.5%
Kroll et al	82	-	8.5-22.9%	-	-	11.4 -20%
Current study	9	0	0	33%	10%	0

Table 3: Various Studies on Immediate Breast Reconstruction with LD flap

STUDY	**Seroma**	**Partial flap loss**	**Superficial skin necrosis**	**Total flap loss**
Pinsolle et al	26%	----	8.3%	4.4%
Sheikh et al	Few	0.71%	1.43%	0
Current study	10%	0	0	5%

Shaikh et al reported a total flap failure rate of 4.6% in TRAM flap and 1.43% in LD flap reconstruction. The partial flap failure rate in their study was 3% and 1% in TRAM and LD flap respectively.[10]Trabulsy and colleagues noted 4 % incidence of total flap loss and 6% incidence of partial flap loss with TRAM flap.[20] Chang et al reported the rate of 5.1% and 6.2% for total and partial flap necrosis respectively.[21] Kroll and Netscher observed a flap loss incidence of 15.4% in slim patients reaching up to 41.7% in obese patients.[22]Elliot reported 8.5% incidence of partial flap loss.[23] Wilkins, in his study, reported 9% incidence of marginal flap necrosis.[9] Therefore, complete flap loss is rare in breast reconstruction whereas partial loss is more common and this can be managed conservatively.

Some degree of fat necrosis and abdominal wall bulge is common after TRAM flap reconstruction, whether free or pedicle. Our results have been comparable to other studies in this regard as well.[10,14,22,23] We had no flap loss with TRAM flap but there was 33% (3/9) superficial skin necrosis which was managed conservatively.

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PSYCHOLOGICAL SATISFACTION

There are numerous scales to judge patient's satisfaction namely SF-36, EORTC, FACT, HADS, HRQL, etc. Most of them describe satisfaction in terms of emotional, functional, sexual and body image outcomes. Although so many scales are available, all these are not exactly comparable. In our study, we preferred questionnaire related to body image only because the importance of body image was clearly demonstrated by the fact that most of the patients with mastectomy upon follow up came with some form of home-made external prosthesis.

Ninety-five percent (19/20) patients in the study group were satisfied with the results of surgical intervention. Out of these, 4(20%) were highly satisfied (score >31) and 15(75%) were moderately satisfied (score >26). However, one patient who had total flap loss was not satisfied with the result at all. The results from a study over 60 patients by Potter et al made it clear that women experiencing complications were twice as likely to report feeling less feminine and dissatisfied with the appearance of their scar, than those with an uncomplicated recovery.[24] More than 50% patients in a similar study by Zertuche et al were moderately satisfied.[25]

Patients with TRAM flap reconstruction were highly satisfied because the size and shape of the breast were better as compared to LD flap reconstruction which gave smaller sizes of a reconstructed breast. Various studies also conclude the superiority of TRAM flap over other procedures making the patient more contented with the size of the breast.[10,12,14]Shaikh et al found that, to achieve reasonable size and symmetry of the breasts, an additional implant was needed with LD flap and that TRAM flap reconstruction had a better aesthetic outcome.[10]

Majority of the patients in our study were not able to afford an implant, hence it was not used in any of the patients.

Patients who underwent MRM alone without any reconstruction were not satisfied at all with the cosmetic outcome. They scored very low on the body image scale as shown in Table 1.

Eighty percent (16/20) were not satisfied, 10% were less satisfied whereas 10% were indifferent. These women overall expressed low self-esteem and felt less feminine & attractive.

On replying to the question 'Do you feel whole after surgery?' most of the patients in group B expressed that there was no change in their selection of clothes and their clothes fitted very comfortably. These patients expressed that they did not encounter any inhibition in going to social functions or changing clothes in common rooms. Contrary to this, the patients in group A experienced significance inconvenience in wearing clothes. The patients of this group frequently attempted to mask the deformity, usually by stuffing clothes under their brassiere. Most of these patients started putting loose clothes like shawls after surgery to draw away the attention from their breasts. Results from the Michigan Breast Reconstruction Outcome Study (MBROS) showed that women undergoing immediate breast reconstruction felt the same body image as it was before surgery[9]. Thus, immediate breast reconstruction seems to preserve normal perceptions of body image in women undergoing mastectomy and serves to improve the quality of life.

CONCLUSION

Immediate breast reconstruction (IBR) following mastectomy is a valid option to preserve the femininity and gives a higher level of patient satisfaction and significantly improves quality of life. Patients are generally not given this option by the treating surgeon because of ignorance or lack of training in reconstruction.

Breast reconstruction surgery has an enormous influence on morbidity and psychological well-being and therefore, it is important that every woman undergoing mastectomy should be given an opportunity to consider breast reconstruction.

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